

KINGSBOROUGH COMMUNITY COLLEGE

Of

The City University of New York

Department of Nursing

ST 5 – Advanced Surgical Procedures V

Prerequisites: ST 4, ST4P

Pre/Corequisites: Bio 51

Corequisite: ST5P

Course Syllabus: 2009

Credit Hours: 4

Catalogue Description: This is an orientation to specific surgical specialties including ophthalmic, vascular, orthopedic, neurosurgery, thoracic and cardiac surgery. This course intends to introduce the student to the surgical specialties with a focus on a systems review of pathology in conjunction with those specific procedures performed. The specialized instrumentation and surgical modalities of each Surgical Specialty will be covered as it relates to the practice of Surgical Technology. In addition, Trauma and Transplant considerations will be discussed.

Course Overview: This course will give the student the opportunity to acquire knowledge of the more complex surgical specialties considering the pathology and associated surgical interventions. It will be taught as a 4-hour weekly lecture in conjunction with Practicum III, which will provide an active hands-on component. The principles will be integrated with the practices at all times with clinical experience in the hospital setting.

Course Objectives: Upon successful completion of this course the student will be able to

1. Discuss the relevant anatomy.
2. Describe the pathology that prompts surgical intervention.
3. Discuss preoperative diagnostic tests and preparations.
4. Identify the names and uses of instruments, supplies and drugs pertinent to that body system,
5. Identify the names and uses of specialized equipment for that system.
6. Define and discuss advanced surgical procedures.
7. Discuss the expected outcomes of the surgical intervention.
8. Discuss the postoperative care and possible complications.

Topical Outline:

- Unit 1 - Plastic and Hand Surgery
- Unit 2 - Pediatric Surgery
- Unit 3 - Ophthalmic Surgery
- Unit 4 - Neurosurgery
- Unit 5 - Orthopedics
- Unit 6 - Vascular Surgery
- Unit 7 - Thoracic Surgery
- Unit 8 - Cardiac Surgery
- Unit 9 - Trauma Surgery
- Unit 10 - Transplant Surgery
- Unit 11 - Emergency Procedures

Teaching Strategies:

Lecture

Teacher-guided discussion

Audio-visual materials

Demonstration/Return demonstration

Course Requirements:

1. Textbooks

Required:

- Goldman, Maxine A., *Pocket Guide to the Operating Room, 3rd Edition*, F.A. Davis, 2008
- AORN, Standards, Recommended Practices and Guidelines, AORN, Inc., 2009
- Fuller, Joanna K., *Surgical Technology: Principles and Practice*, 4th Edition, Elsevier, 2005
- Ehrlich, A and Schroeder, Carol L., *Medical Terminology for Health Professions*, Delmar Thomson, 6th Edition, 2009
- Rutherford, Colleen J., *Differentiating Surgical Instruments*, F.A. Davis Company, Philadelphia, 2005

Recommended:

- Caruthers, Bob L, *Surgical Technology for the Surgical Technologist: A Positive Care Approach*, AST Publishers, 2nd Edition, 2004
- Meeker, Margaret H. and Jane C. Rothrock, *Alexander's Care of the Patient in Surgery*, Mosby, St. Louis, Missouri, 13th Edition, 2007
- Thomas, L. Clayton, *Taber's Cyclopedic Medical Dictionary*, F.A. Davis Company, Philadelphia, Pennsylvania, 20th Edition, 2006

2. Attendance:

A student is deemed excessively absent when he or she has been absent 15% of the number of contact hours a class meets during a semester. When a student is excessively absent, a grade of "W" or "WU" will be assigned as described in the college catalog.

3. Health Clearance – CPR Training – Malpractice Insurance:

Students are required to have health clearance, malpractice insurance and evidence of CPR training prior to registration.

During the semester any change in the student's health clearance (e.g., serious illness, accident, pregnancy, etc.) necessitates evaluation by student health service. Student responsibility includes notification of the instructor and course coordinator. Health clearance must be maintained to continue course enrollment.

4. Evaluation:

Grades will be calculated according to college and departmental policy as follows:

A+	98-100
A	95-97
A-	90-94
B+	88-89
B	85-87
B-	80-84
C+	78-79
C	75-77
C-	70-74
D+	68-69
D	65-67
D-	60-64
F	59 and below
W	Withdrew without penalty
WU	Unofficial Withdrawal (Counts as failure)
INC	Term's Work Incomplete. Counts as "F" grade unless work is completed within six months.

Grades will be determined as described below:

Unit Tests	60%
Final Exam	40%

The Department of Nursing adheres to the Policies and Procedures on Academic Integrity as set forth by CUNY. See the Surgical Technology Student Handbook, the KCC Catalog and website for further details.

Students are expected to take all tests when scheduled. Exceptions to this rule will be for emergency situations and the faculty must know in advance.

Students who do not take a test on the scheduled date are required to take a makeup test. All makeup tests will be given at the end of the semester.

Students who fail to take the scheduled exams or makeup will receive a grade of zero for that test.

All written assignments must comply with college standards for written work. Written assignments are to be turned in during the class period on the date that they are due.

All assignments must be handed in by the end of the course to complete the requirements of the course. A late assignment will meet the requirements of the course but will not receive full credit. If written assignments are not submitted by the end of the course, the student will receive a grade of "F" from the course.

A conference with the instructor is required at mid-semester and at the end of the course to discuss the student's progress. Students may initiate conferences at other times.

5. Classroom Decorum:

All pagers, wireless phones, electronic games, radios, tape or CD players or other devices that generate sound must be turned off when any member of the academic community enters a classroom. Cellular devices are allowed to be on in the classroom only if the owner is using the caller ID, voice messages or a vibrating battery mechanism. Members of the academic community must exit the classroom to make or receive calls.

6. Retention Criteria:

Criteria for retention in the Program mandates that students must:

- a. receive no more than two grades under "C" in any pre or corequisites
- b. earn a minimum final grade of "C" in every Surgical Technology course.
- c. the student must repeat a Surgical Technology course once if the grade is below "C"
- d. a second grade below "C" will result in the student's dismissal from the program.
- e. Students who fail a course achieving a grade of not less than "C-" may apply to repeat the course one time only. Repeating the course is subject to space availability.
- f. Students must submit an **"Intent to Return to Surgical Technology Form"** outlining what they thought caused them to be unsuccessful and include a plan for success that demonstrates significant changes in how they will approach the course when repeated.

7. Dress Requirements:

Students must present themselves as professional role models. Students are to travel to and from health agencies in street clothes.

"In Uniform" refers to the standard uniform of KCC Department of Nursing/Surgical Technology Program

1. All students are to change into appropriate scrubs provided by the agencies
2. A knee-length, white lab coat is to be worn when necessary.
3. The KCC patch is to be sewn on the left upper sleeve of the lab coat.
4. Current KCC Student ID card is to be worn at all times.
5. No jewelry other than plain wedding ring.
6. Nails should not extend beyond the fingertips and should be rounded and clean.
7. No nail polish is permissible in the clinical agencies.
8. Hair is to be clean, off the face and above collar line.
9. Subdued makeup
10. In the clinical setting, all requirements of the AORN for attire must be maintained.

8. Fatigue can certainly impair a health care worker's ability to provide safe, professional care. Thus KCC's Nursing Department states: All students need to carefully assess his/her level of fatigue, school requirements in terms of lecture, on-campus labs and clinical experiences and own work schedules. This assessment should carefully consider the potential impact of excessive employment on his/her ability to provide safe, professional care. Each student has an ethical responsibility to ensure that fatigue does not negatively impact student responsibilities.

Unit 2	Pediatric Surgery		
Learner Objectives	Content/Lecture Discussion	Related Learner Experiences	Laboratory Objectives
<p>Upon completion of this unit the student shall be able to:</p> <p>1. Discuss the role of the surgical technologist as it relates to Pediatric Surgery.</p>	<p>Pediatric Procedures</p> <ul style="list-style-type: none"> - tracheoesophageal fistula - biliary atresia - intestinal atresia - imperforate anus - diaphragmatic hernia repair - excision of cystic hygroma - pyloromotomy - omphalocele repair - gastroschisis repair - reduction of intussusception - derotation of volvulus - colon resection for Hirschsprung's disease - bladder exstrophy repair 	<p style="text-align: center;">Week 2</p> <p>Reading: Fuller, P 878-894, 703-707 574-576, 633-635, 648-650 832-837, 866-868, 923-926</p> <p>Handout: Outline for pediatric procedures.</p>	

UNIT 3	Ophthalmic Surgery		
Learner Objectives	Content/Lecture Discussion	Related Learner Experiences	Laboratory Objectives
<p>Upon completion of the unit the student will be able to:</p> <ol style="list-style-type: none"> 1. Discuss the role of the surgical technologist as it relates to those procedures of the eye. 	<ol style="list-style-type: none"> 1. Eyelid procedures <ul style="list-style-type: none"> - ectropian/entropion repair - levator resection 2. Strabismus procedures <ul style="list-style-type: none"> - recession - resection 3. Corneal procedures <ul style="list-style-type: none"> - keratoplasty/corneal transplant - radial keratotomy 4. Lens Procedures <ul style="list-style-type: none"> - intracapsular cataract extraction - extracapsular cataract extraction - phacoemulsification - placement of intraocular lens 5. Retinal Procedures <ul style="list-style-type: none"> - cryotherapy - scleral buckling 6. Vitreous Procedures <ul style="list-style-type: none"> - anterior vitrectomy - posterior vitrectomy 7. Glaucoma Procedures <ul style="list-style-type: none"> - iridectomy - trabeculectomy - placement of drainage shunt 8. Miscellaneous <ul style="list-style-type: none"> - excision of pterygium - excision of chalazion - lacrimal duct probing - dacryocystorhinostomy - enucleation - orbital exenteration 	<p style="text-align: center;">Week 3</p> <p>Reading assignment: Fuller, P 592-626 Rutherford, <i>Differentiating Surgical Instruments</i>, Chapter 7, p 127-144 Ehlich and Schoeder, <i>Medical Terminology for Health Professions</i>, p 308-321, Chapter 11</p> <p>Media Center: 1. Eye Instruments</p> <p style="text-align: center;">Week 4</p>	<p>The student will:</p> <ol style="list-style-type: none"> 1. Demonstrate the handling of ophthalmic sutures and instrumentation. 2. Demonstrate the use of those supplies specific to ophthalmic surgery, i.e. weck-cels, buckles, intraocular lenses, etc.

UNIT 4	Neurosurgery		
Learner Objectives	Content/Lecture Discussion	Related Learner Experiences	Laboratory Objectives
<p>Upon completion of the unit the student will be able to:</p> <p>1. Discuss the role of the surgical technologist as it relates to neurosurgery.</p>	<p>1. Cranial Procedures</p> <ul style="list-style-type: none"> - trephination - craniectomy - craniotomy <ul style="list-style-type: none"> * aneurysm * tumor - cranioplasty - ventricular shunting - transphenoidal hypophysectomy - stereotactic procedures <p>2. Spinal Procedures</p> <ul style="list-style-type: none"> - cervical fusions - lumbar laminectomy - spinal fusion' - percutaneous discectomy - chemoneucleolysis - cordotomy/rhizotomy <p>3. Peripheral Nerve Procedures</p> <ul style="list-style-type: none"> - median nerve exploration - ulnar nerve transposition 	<p style="text-align: center;">Week 5</p> <p>Reading assignment: Fuller, P 895-930 Rutherford, <i>Differentiating Surgical Instruments</i>, Chapter 5, p 77-96 Ehlich and Schoeder, <i>Medical Terminology for Health Professions</i>, p 273-308, Chapter 10</p>	<p>The student will:</p> <p>1. Demonstrate the use of supplies for neurosurgery; i.e. lentines/patties, raney clips</p>

UNIT 5	Orthopedic Surgery		
Learner Objectives	Content/Lecture Discussion	Related Learner Experiences	Laboratory Objectives
<p>Upon completion of the unit the student will be able to:</p> <p>1. Discuss the role of the surgical technologist as it relates to orthopedic procedures.</p>	<p>1. Fracture management</p> <ul style="list-style-type: none"> - types of fractures - bone healing - closed reduction/casting - external fixation - open reduction/internal fixation - prosthetic replacement - treatment of non-union <p>2. Shoulder Procedures</p> <ul style="list-style-type: none"> - arthroscopy - rotator cuff repair - humeral head arthroplasty - total shoulder replacement <p>3. Upper limb Procedures</p> <ul style="list-style-type: none"> - elbow arthroplasty - total elbow replacement - total wrist replacement <p>4. Hip Procedures</p> <ul style="list-style-type: none"> - Fixation of femoral head fractures - total hips arthroplasty <p>5. Lower Limb Procedures</p> <ul style="list-style-type: none"> - epiphydesis - fractures <p>6. Knee Procedures</p> <ul style="list-style-type: none"> - arthroscopy - Meniscectomy - anterior collateral ligament repair - total knee replacement 	<p style="text-align: center;">Week 6</p> <p>Reading assignment: Fuller, P 708-760 Rutherford, <i>Differentiating Surgical Instruments</i>, Chapter 4, p 61-76 Ehlich and Schoeder, <i>Medical Terminology for Health Professions</i>, p 59-123, 3 &4</p> <p>Media Center:</p> <ol style="list-style-type: none"> 1. Orthopedic Instruments <p style="text-align: center;">Week 7</p>	<p>The student will:</p> <ol style="list-style-type: none"> 1. Demonstrate the assembly and disassembly of power instruments. 2. Demonstrate the use of the pneumatic tourniquet.

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| | <p>7. Ankle/Foot Procedures</p> <ul style="list-style-type: none">- arthroscopy- arthrodesis- malleolar fracture- total ankle replacement- triple arthrodesis- bunionectomy- correction of hammer toe | | |
| | <p>8. Miscellaneous</p> <ul style="list-style-type: none">- amputation- disarticulation- osteotomy- tendon procedures | | |

UNIT 6	Vascular Procedures		
Learner Objectives	Content/Lecture Discussion	Related Learner Experiences	Laboratory Objectives
<p>Upon completion of the unit the student will be able to:</p> <ol style="list-style-type: none"> 1. Discuss the role of the surgical technologist as it relates to those procedures of the peripheral vascular system. 	<ol style="list-style-type: none"> 1. Dialysis Procedures <ul style="list-style-type: none"> - arteriovenous fistula - arteriovenous graft 2. Embolectomy/thrombectomy 3. Carotid endarterectomy 4. Bypass grafting <ul style="list-style-type: none"> - femoral - popliteal – tibial - aorto - iliac – femoral 5. Repair of aneurysms <ul style="list-style-type: none"> - aortic - other - endovascular 6. Inferior vena cava filters 7. Sympathectomy 8. Amputations 	<p style="text-align: center;">Week 8</p> <p>Reading assignment: Fuller, P 761-793 Rutherford, <i>Differentiating Surgical Instruments</i>, Chapter 8, p 145-162 Ehlich and Schoeder, <i>Medical Terminology for Health Professions</i>, p 124-158</p> <p>Media Center: 1. Vascular Instruments</p>	<p>The student will:</p> <ol style="list-style-type: none"> 1. Identify the various types of synthetic grafts. 2. Demonstrate the proper use of surgical supplies; i.e. Fogarty catheters, vessel loops, tapes and dopplers.

UNIT 7	Thoracic Surgery		
Learner Objectives	Content/Lecture Discussion	Related Learner Experiences	Laboratory Objectives
<p>Upon completion of the unit the student will be able to:</p> <p>1. Discuss the role of the surgical technologist as it relates to thoracic surgery.</p>	<p>1. Closed Procedures</p> <ul style="list-style-type: none"> - bronchoscopy - mediastinoscopy - thoroscopy - insertion of chest tubes <p>2. Open Procedures</p> <ul style="list-style-type: none"> - scalene node biopsy - thorocoplasty - thorocotomy - lung biopsy/wedge resection - pneumonectomy - decortication of lung - pericardial window 	<p style="text-align: center;">Week 9</p> <p>Reading assignment: Fuller, P 794-877 Rutherford, <i>Differentiating Surgical Instruments</i>, Chapter 8, p 145-162 Ehlich and Schoeder, <i>Medical Terminology for Health Professions</i>, p 187-216, Chapter 7</p>	<p>The student will:</p> <p>1. Demonstrate the proper method of preparation of under water chest drainage systems.</p>

UNIT 8	Cardiac Surgery		
Learner Objectives	Content/Lecture Discussion	Related Learner Experiences	Laboratory Objectives
<p>Upon completion of the unit the student will be able to:</p> <ol style="list-style-type: none"> 1. Discuss the role of the surgical technologist as it relates to those procedures of the eye. 	<ol style="list-style-type: none"> 1. Pacemaker/automatic implantable cardiac defibrillator (AICD) 2. Intra-aortic balloon insertion 3. Congenital Anomalies <ul style="list-style-type: none"> - patent ductus arteriosus - coarctation of the aorta - atrial septal defect - ventricular septal defect - Tetralogy of Fallot 5. Acquired lesions <ul style="list-style-type: none"> - Percutaneous transluminal coronary angioplasty (PTCA) - Coronary artery bypass graft - Valve repair/replacement - Ventricular Aneurysm 	<p style="text-align: center;">Week 10</p> <p>Reading assignment: Fuller, P 794-877 Rutherford, <i>Differentiating Surgical Instruments</i>, Chapter 8, p 145-162 Ehlich and Schoeder, <i>Medical Terminology for Health Professions</i>, p 124-158, Chap 5</p> <p>Media Center: 1. Cardiovascular Instruments</p>	

UNIT 9	Trauma Surgery		
Learner Objectives	Content/Lecture Discussion	Related Learner Experiences	Laboratory Objectives
<p>Upon completion of the unit the student will be able to:</p> <p>1. Discuss the role of the surgical technologist as it relates to trauma.</p>	<ol style="list-style-type: none"> 1. Mechanism of injury. <ul style="list-style-type: none"> - motor vehicle accidents - falls - penetrating trauma - explosions - thermal 2. Assessment <ul style="list-style-type: none"> - lab tests - diagnostic procedures 3. Multiple operative procedures 4. Infection 5. Autotransfusion 6. Evidence Preservation 7. Anesthesia Considerations 8. Surgical Interventions <ul style="list-style-type: none"> - subdural hematoma - facial fractures - penetrating eye trauma - rib fractures/flail chest - aortic dissection - myocardial contusion - splenic rupture - liver injury - skeletal injuries 	<p style="text-align: center;">Week 11</p> <p>Reading assignment: Fuller, 208, 26</p> <p>Handout: Autotransfusion Prioritization of Emergency Procedures</p> <p>AORN : Mass Casualties</p>	

UNIT 10	Organ/Tissue Donation and Procurement		
Learner Objectives	Content/Lecture Discussion	Related Learner Experiences	Laboratory Objectives
<p>Upon completion of the unit the student will be able to:</p> <p>1. Discuss the role of the surgical technologist as it relates to organ/tissue donation and procurement.</p>	<ol style="list-style-type: none"> 1. NYS Regulations 2. Organ Donor Network 3. Criteria for donation 4. Order of procurement 5. Typical procurement procedures 6. Transplantation <ul style="list-style-type: none"> - kidney - liver - heart - lungs - cornea - islet cells - skin - bone - tendon 	<p style="text-align: center;">Week 11</p> <p>Reading assignment: Fuller, P 870-877, 580-582, 500, 830-831</p> <p>Handouts:</p> <ul style="list-style-type: none"> - NYS Legislation related to procurement - Donor Network Criteria 	

UNIT 11	Emergency Procedures		
Learner Objectives	Content/Lecture Discussion	Related Learner Experiences	Laboratory Objectives
<p>Upon completion of the unit the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe the clinical manifestations and management of an anaphylactic reaction. 2. Describe the clinical manifestations and management of a hemolytic transfusion reaction. 3. Describe the clinical manifestations and management of a local anesthetic toxicity reaction. 4. Describe the necessary equipment for suctioning and the procedure for suctioning the nose and mouth. 5. Describe the clinical manifestations and management of DIC. 	<ol style="list-style-type: none"> 1. Clinical Manifestations 2. Management 3. Prevention 1. Manifestations 2. Management 1. Manifestations 2. Management 1. Equipment 2. Procedure 1. Causes 2. Treatment 	<p style="text-align: center;">Week 12</p> <p>Handouts: Outline of anaphylaxis</p> <p>Reading assignment: Fuller P 260-265 Handouts: Outline of transfusion</p> <p>Reading assignment: Fuller, P 237-238 Handouts: Local Anesthesia Toxicity</p> <p>Handout: Procedure for Suctioning</p>	

<p>6. Describe the clinical manifestations of impending cardiac arrest.</p> <p>7. Demonstrate competence in Basic Life Support</p> <p>8. Describe the roles of the perioperative personnel during a cardiac arrest in the OR.</p>	<p>1. Manifestations</p> <p>1. Cardiopulmonary Resuscitation techniques.</p> <p>1. Anesthesia. 2. Surgeon 3. Nursing 4. Surgical Technologist</p>	<p>Reading assignment: Fuller, P 236</p> <p>Handouts: Cardiac Arrest</p> <p>Handout: Basic Life Support Review</p> <p>Handout: Arrest in the Operating Room</p>	<p>The student will: 1. Demonstrate Basic Life Support techniques.</p>
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